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(71)Applicant : SCI RES LAB INC

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(54) ELECTROSTATIC ION ACCELERATOR

(57)Abstract:

PURPOSE: To provide an ion accelerator capable of outputting a current higher than a general low-energy accelerator by generating isotopes for medical use for positron emission tomographic X-ray radiograph by an ion beam of about 0.2mA and 1MV.

CONSTITUTION: An accelerating column 208 is housed within a pressurizing chamber 222, a vacuum pump connected to T-shaped tube fittings 201, 220 provided on both end parts of the pressurizing chamber 222 is used to produce high vacuum inside the column 208, and an ion beam of 0.2mA accelerated at 1MV is emitted from a power source 200 to a target set to a ground potential through the fitting 201, the column 208 and the fitting 220. On the inlet side of the column 208, the beam passing in the inner part is made into a low-energy negative ion beam by a cascade rectifier circuit 206 enclosing the column 208, and the beam is changed into a positive ion beam 218 by a stripping cell 212 which is enclosed by a high-voltage terminal 210. On the outlet side, it is accelerated by use of an accelerator column 216 and emitted toward the target. A high-pressure insulating gas 204 such as SF₆ is sealed in the pressurizing chamber 222.

